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LINCOLN, NEBRASKA

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OF THE

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The Genesis and Pathologic Anatomy of Diverticula of the Sigmoid

BY PAUL G. WOOLLEY, OMAHA, NEBRASKA

You will remember that not many years have passed since the medical profession began to realize that certain symptoms, generally referred to as "inflammation of the bowel," were the result of an inflammation of the vermiform appendix.

In more recent times,—as a matter of fact in very recent times —attention has been called to cases presenting symptoms in every way similar to those of appendicitis except that the pain, rigidity, tumor, etc., are on the left side instead of being on the right. Some of these cases are more like chronic than acute left-sided appendicitis.

It has been found that in such cases the symptoms originate, not in a displaced appendix, but in pouches of varying size, whose lumina are in direct communication with the lumen of the intestine, usually the large intestine.

At the expense of brevity, perhaps, but for the sake of lucidity, let me give you the common classification of intestinal diverticula, for the subject is not a common one tho it is coming to be, and you have perhaps forgotten it.

Intestinal diverticula are congenital or acquired. Meckel's diverticulum is an example of the former. Futhermore they may be true or false. The true diverticula are merely bulgings

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of the intestinal walls so the walls of the bulging pouches are composed of all the layers of the intestine,—namely, mucosa, submucosa, muscularis, and serosa. False diverticula on the other hand are for the purposes of description hernial protrusions of the mucous membrane of the gut thru the muscularis of the intestine and their walls are therefore composed of mucosa, submucosa, and serosa. It is to these false diverticula that I wish to call your further attention.

To begin with they are more common in the large intestine than in the small, and are much more common in the sigmoid than in any other part of the large bowel. Grazer found them in ten of twenty-eight cases. Sudzuki found them fifteen times in forty cases. In Omaha Dr. Dunn and I have encountered them four times in sixty cases that have come to autopsy. One of these was of the appendix. They are more frequently seen near or at the mesenteric border of the bowel. They may project into the appendices epiploicae, or into the mesentery.

The causes given to account for their production are various, but they are certainly more common in elderly persons especially in those who have suffered from constipation. This fact formed the basis for the conception that they were the result of atony of the muscle of the bowel with coincident increase of intraintestinal pressure. Klebs believed that they were more frequent in fat persons and that they resulted from traction on the mesentery. Hansemann thot them more frequent in thin persons and that they were due to pulsion. Klebs pointed out that they bore a relation to the blood vessels of the intestinal walls.

Now if the bulgings were due to pulsion they would tend to be located at the points of least resistance, and with the idea of proving where the normal points of least resistance were Herschel, Hanau, and Good made experiments by filling the guts of cadavers with water and observing where rupture took place. They found that rupture occurred regularly into the mesentery. Chlumsky later made experiments of a similar character but used living intestines, and showed that the point of greatest weakness was not at the mesenteric border, but opposite it. The conclusion is obviously then that diverticula are not dependent upon weakness of the intestinal walls alone. Be-

sides as Beer suggests, if it were merely anatomic weakness that accounted for these protrusions, all old persons should have them. Beer believes that the diverticula result from a combination of age, muscular weakness, and constipation. There is still another factor that I have mentioned, namely, that of the blood vessels. Klebs first called attention to this and Hansemann accepted it. All later writers have considered it an important factor, for it is held that the real *loci minoris resistentiae* are at the points where the vessels penetrate the intestinal walls, and that the combination of this weakness plus internal pressure, due to accumulation of gases or fecal matter or both, is the basis for the development of the herniae of the mucous membrane. Moreover a considerable number of the reported cases have showed that the diverticula bore a more or less definite relation to the sheaths of the vessels.

It has been suggested that passive congestion such as occurs in heart and pulmonary diseases is active in predisposing to the formation of diverticula by causing dilation of the vascular pores. A similar predisposing factor would be an abnormal deposition of fat along the sheaths of the veins, but this can not be demonstrated in many cases. It seems to me that congestion can best explain this matter; not the usual passive congestion however, for that, while it might lead to widening of the pores, would also keep them filled, and therefore exert a counter-pressure to balance the internal intestinal pressure. I would suggest (perhaps it has already been suggested; the literature at my command has not been complete) that the important factor so far as the relation to the blood vessels is concerned, is alternate high and low blood pressure:—a series of pressure phenomena that might well occur in any case of constipation, and which if accompanied by muscular atony or atrophy due to old age or previous inflammatory changes would make the conditions for the formation of diverticula reasonably good. Add to this constipation with its coincident retention phenomena and it seems to me the conditions would be perfect.

Now if these aforementioned factors are the only ones we would expect that the diverticula would arise between the rugae of the intestine and give rise to appearances illustrated in Mayo's article on this subject. If, to illustrate this mechanically, we take a rubber glove with the fingers turned in and inflate the

glove with air, we find, instead of the finger of the glove being gradually evaginated with the evagination commencing at the tip of the fingers, that the bulging is between the fingers and the evagination commences at the base of the fingers. In my case on the contrary the diverticulum formation commences at the tips of the mucous folds and gradually extends outward, until the mucous membrane and the submucosa protrude thru the muscularis forming a hernia. In this process there seems to be a relation to the blood vessels.

Before trying to explain this process let me give you a brief history of the case from which my material came.

The man was of middle age, of good habits, strong and well except for some indefinite digestive trouble of some duration, which latterly was associated with an atonic condition of the lower bowel. The result was that for the space of some time, months perhaps, his rectum was never emptied except possibly after an enema. At this time enemata while they caused an unusual amount of discomfort, relieved him greatly and lead to a decrease of the urinary indican. Indicanuria I might say was constant and of a marked degree. About six months before his death the patient was taken with sudden and severe abdominal pains and was rushed to a hospital where an appendicectomy was performed. The appendix was not severely affected, was congested but nothing more. The peritoneal cavity contained a small amount of serum but there was no exudate on the peritoneum.

Later the patient was put upon a rather strict dietary, he having shown some symptoms of intestinal autointoxication, in evidence of which was the continued presence of large amounts of indican in the urine. He was forbidden to take indiscreet chances with his diet. These last orders he neglected, and from a condition of gradual improvement he was confined to bed. After this time it was noticed that there was more or less constant pain in the left side in the sigmoid region, with the gradual appearance of a tumor mass of indefinite proportions. At this time enemas simply served to accentuate the pain in the large bowel, the last one causing collapse. After a consultation he was again admitted to the hospital where he was again operated upon. An incision in the appendix region allowed the escape of a quantity of pus which seemed to come from the pelvis.

The pelvis was drained. Some days later the patient died, the mass in the left side persisting.

The autopsy report was as follows:

Operation about ten hours after death. Skin very pale. Slight rigor mortis. Peripheral lymph glands not enlarged. Two operative wounds on abdomen; one in mid-line about ten cm. long; one over appendix about seven and one-half cm. long. The latter drained. Subcutaneous fat well developed.

Upon opening the peritoneal cavity it was seen that the omentum was adherent over the whole anterior surface of the peritoneum, and less extensively to the intestinal coils. It was rolled into a mass in the left hypochondrium.

The intestinal coils were more or less generally adherent by old fibrous adhesions, and were also adherent to the peritoneum in the right flank. The upper coils of the ileum were closely adherent, as were also the lower ones, which were adherent to the sigmoid by old and recent adhesions.

The cecum was bound down by adhesions, most of them recent, the result of an operation done some days before to drain the cecal and pelvic regions. There was no pus in the pelvis or about the cecum. The appendix had been removed.

The intestines were carefully dissected out and no other process than an adhesive fibrosis was encountered until the lower loops of the small intestines were dissected away from the sigmoid, just at the brim of the pelvis. At this point an abscess cavity that was under the sigmoid and walled off by the small intestine, was opened.

As the large intestine was removed pus was again encountered to the left and beneath the descending colon and sigmoid. This suppurative process could be traced to the abscess cavity mentioned above and to a larger one to the left of it, in the post-intestinal tissues and just at the brim of the pelvis. The process had apparently also extended down (judging from the adhesions) but this extension had been limited by adhesions in the pelvis. Extending up along and behind the descending colon the line of extension of suppuration could be followed to the spleen, which was half enclosed in an abscess cavity.

An incision thru the diaphragm from below and exploration of the left pleural cavity occasioned a gush of foul-smelling, greenish-yellow, thin pus to the amount of about 500 c. c.

The thorax was then opened and examined. The left lung was partially compressed by an empyema that extended from the diaphragm to near the apex. The pleura was covered by a greenish yellow fibrino-purulent exudate. The left apex was the seat of a large healed scar, and scattered about on the pleura and in the pulmonary tissue were fibroid and calcareous obsolescent tubercles.

The right lung was also the seat of a healed tuberculous process, the pleura being thickly studded with obsolescent tubercles especially at the junction, posteriorly, of the inter-lobar clefts.

The heart was pale but otherwise normal.

The liver was small, pale and exceedingly soft.

The kidneys were very large and pale. The capsules stripped leaving an untorn surface. Section of the organ showed the cortex enlarged, pale and granular in appearance, with little line of demarcation between it and the medulla.

The adrenals were normal.

The pancreas was normal.

The spleen was ofnormal size, but soft and the seat of an acute suppurative perisplenitis.

When the intestines were opened it was seen that the small intestines were atrophic, the walls thinned, the rugae not prominent and the mucosa thinned. From the cecum down, the submucosa and the muscularis became gradually thickened until in the vicinity of the brim of the pelvis, the wall was from two to five millimeters thick, and the perisigmoidal and rectal tissues were generally firm and infiltrated.

The sigmoid and rectum showed accentuated diverticular pouches, all of which had thinned distal ends—that is, at their mouths the submucosa and muscularis were very thick and edematous. At the bottom of these pouches the thickness measured not more than one-half to one millimeter. Extending from the distal end of one of these pouches was a sinus, surrounded by thickened fibroid walls, that communicated with the larger post-colonic abscess cavity mentioned above. From this pouch or diverticulum the suppurative process had apparently originated. The tops of the folds of the descending colon and sigmoid showed numbers of small areas having somewhat the appearance of shallow ulcers and some scars. These areas measured not more than one by two millimeters.

They had slightly thickened, raised, and rounded margins, and gray bases.

ANATOMIC DIAGNOSIS

Anemia; catarrhal sigmoiditis and proctitis; diverticulum formation; chronic perforative diverticulitis; suppurative perisigmoiditis; colitis, and perisplenitis; emypema; acute parenchymatous degeneration of the kidney; fatty degeneration of the liver; obsolescent, calcareous pulmonary tuberculosis; left apical scar; general organized peritoneal adhesions; operative wounds.

What happened in this case as I conceive it was this. The patient had suffered from atony of the bowel, coincident constipation, and chronic enteritis. This latter accounts for the hypertrophy of the submucosa in the lower bowel. At the same time the changes in blood pressure, resulting from straining to empty the bowels and from the accumulation of gases in the intestinal brought about the anatomic changes that favored diverticulum formation, and this was assisted by continued fecal stasis and increased intraintestinal pressure—the whole process forming a vicious circle. It is possible, and I put this forth merely as a suggestion, that the first dipping down of the mucosa at the tops of the folds may have been due to a fibrosis resulting from the action of toxins upon the perivascular tissues in the absorption paths, and that the contraction of this new-formed fibrous tissue led to the peculiar early deformity at the apices of the intestinal folds. However that may be, diverticula were formed and in one of them—in one of these hernial pouches—fecal accumulation occurred and this resulted in ulceration of the wall of the pouch, and in perforation into the perisigmoidal tissues. The infective agent must have been one of mild virulence and was very possibly the colon bacillus, for the suppurative process was a slow one and caused no marked reaction beyond a slight leucocytosis, except on two or three occasions, after enemata, and at the times of the two operations. It seems apparent that after the perforation the pus extended down into the pelvis which it finally filled so completely that it could be drained from an appendix incision. In this connection it is interesting to note that during this stage of downward extension the patient was on his feet, and that after the drainage of the pelvis when

he was no longer able to be about, but was confined to his bed, the suppuration extended up along the descending colon.

So much for this case. You can see what serious difficulties can result. Other results in chronic cases are stenosis of the sigmoid or other parts of the intestine, perforation into the general peritoneal cavity, perforation of the bladder, etc. In acute cases as I have said all the complications that accompany acute appendicitis may occur. The condition is one that merits careful study.

Acute Perforations of the Hollow Viscera

BY BYRON B. DAVIS, OMAHA, NEBRASKA

Probably no calamity which may befall calls for more promptness in treatment than the several perforative lesions which frequently involve the gastro-intestinal tract. Every man engaged in the practice of medicine should have clearly in mind the differential points in the diagnosis of these conditions as well as clear cut notions about treatment. Prompt diagnosis and prompt treatment are necessary if the life is to be saved.

Perforation of gastric and duodenal ulcers, of the gall-bladder, of the appendix and typhoid perforations are the type of all and will be the ones to be considered at this time. Acute perforations of round ulcers of the stomach are practically always accompanied by serious and well-marked symptoms. First there is usually sudden sharp intense pain in the epigastric region, so sudden and so intense that it is not a rare occurrence for the patient to fall to the floor in a faint. This very intense pain is usually short in duration, but well-marked shock is present for a variable length of time, ranging from an hour to several hours. The ordinary manifestations of shock are found, a cold clammy skin, paleness of the face and lips, restlessness, a thready pulse and a subnormal temperature.

Within a few hours tenderness over the abdomen becomes general, perhaps slightly greater over the epigastrium, and abdominal rigidity is marked and board-like. When the rigidity is first manifest the abdomen is usually flat, but it soon becomes distended and tympanitic and vomiting is likely to occur, the typical vomitus of peritonitis. The pulse has now become fuller and more rapid and as the peritonitis progresses it becomes still more rapid and more feeble.

The symptoms given by Mayo Robson are as follows:—

"A sudden sharp abdominal pain..... Almost immediately the expression of the face changes to one of anxiety and great distress; the extremities become cold and clammy and the face blanched; the respirations are usually shallow and quick and the pulse rapid and most imperceptible at the wrist; vomiting may occur. As a rule the patient rallies and

the initial symptoms of shock pass off to a certain extent. There is then a great complaint of thirst which can not be satisfied and the urine is scanty and highly colored."

The recti are rigid, the whole abdomen is board-like, at first retracted, later distended with gas. Liver dullness usually absent. In about 90% of the cases a history of previous stomach trouble can be elicited.

Treatment—Total abstinence from water, as this will only increase the peritoneal soiling. Cardiac stimulants used hypodermatically and if the shock is very severe all the usual methods to combat shock. Even on strong suspicion laparotomy should be performed since it has been shown that the earlier the operation after this calamity the better the results. Mayo Robson and Moynihan have compiled a table of the mortality following operation on 133 cases.

Operated within 12 hours.....	Mortality	28.5 percent.
Operated in from 12 to 24 hours ...	Mortality	63.6 percent.
Operated in from 24 to 36 hours....	Mortality	87.5 percent.
Operated in from 36 to 48 hours....	Mortality	100.0 percent.
Operated after 48 hours	Mortality	51.5 percent.

It is seen in this table that the mortality increases rapidly up to forty-eight hours when it becomes 100 percent. Cases done later than this show less mortality, due no doubt, to the well-known fact that some of them have only a localized infection, becoming walled off and these occasional, favorable cases are the ones most likely to be in a condition after two days to warrant an operation.

Sinclair Kirk, quoted by Robson, reports the most ideal results. He gives eleven cases all of which recovered. Eight of them were operated within five hours, one in seven, one in ten and one in twenty hours after perforation. It is now generally conceded by those with the best experience that the operation should be done with the greatest promptness possible compatible with good and thoro work regardless of the shock present at the time. Death is not as likely from shock as from peritonitis if operation waits on shock.

As regards technic simple closure of the perforation by two or three superimposed purse-string sutures of linen thread, is the best. The subject of drainage is important. If there is almost no peritoneal soiling it is sometimes advisable not to drain.

As a rule pelvic drainage thru a stab-wound above the pubes, by means of a rubber or glass tube, and with the patient in the exaggerated Fowler position is most likely to meet with good results. This should also be followed by the use of normal salt solution per rectum after the Murphy method, and ice over the abdomen, nutritive enemeta and entire gastric abstinence for from three to seven days.

The question whether, after closure of a gastric perforation, it is advisable to perform gastro-enterostomy has been much in the foreground during the past few years. Often ulcers are multiple and secondary perforations may occur, as they have done in many instances. Robson, in Keen's Surgery gives the arguments in favor of gastro-enterostomy under such circumstances as follows:—

"1. That other ulcers will be cured by the operation.

2. That if a second ulcer is on the point of perforation such perforation will probably be prevented, as tension of the stomach walls will be avoided.

3. That after gastro-enterostomy more secure healing of the sutured ulcer is likely to occur, and there will be less likelihood of the stitches giving way.

4. It diminishes the risks of hematemesis occurring after operation.

5. It enables saline aperients to be given shortly after operation and so secures more efficient drainage of the peritoneal cavity.

6. It permits earlier feeding than would otherwise be the case.

7. If the ulcer is at the pylorus it prevents the danger of stenosis."

In perforating ulcer of the duodenum we have the same acuteness of the onset, but the sharp primary pain is a little more to the right. If a history of previous gastric symptoms is obtainable, the pain is found to have come on two and one-half hours to four hours after eating instead of one to two hours as in gastric ulcer. The course of the case, the need for prompt operation and in general the technic of the operation and the indications for or against gastro-enterostomy are essentially the same as have been outlined for perforating ulcers of the stomach.

Perforations of the gall-bladder are fortunately rare. The sudden pouring out of the contents of a distended gall-bladder

into the unprepared peritoneal cavity brings about intense shock which may prove immediately fatal. Usually the inflammatory trouble has already produced pericystic adhesions so that the general peritoneum is protected against acute perforations. When they occur the operation should usually include removal of the gall-bladder.

Acute perforations of the appendix vermiformis are exceedingly frequent, more so, I am convinced, than is generally supposed. Here, too, the general peritoneal cavity is usually protected by adhesions before the perforation occurs, resulting in a localized abscess. The omentum here serves a most useful purpose surrounding and becoming adherent to the inflamed appendix.

Unfortunately the infection of the external peritoneal covering of the appendix does not precede perforation, at least not soon enough to induce life-saving adhesions. In these cases there is immediate shock of greater or less degree and a rapidly following general peritonitis. Operation before time for the onset of peritonitis gives the best results. If not soon enough for this the more recent the peritonitis the better. In general it may be said that the mortality increases rapidly with the development and progress of the peritonitis.

Every case of typhoid fever is liable at any moment, especially during the latter part of the second and during the third week, to become a very urgent emergency surgical case by the occurrence of a perforation. It is doubtful if we have even yet fully realized the importance of perforations as a mortality factor in typhoid fever, or the number of lives that might be saved by prompt diagnosis of this calamity and timely operation. Osler several years ago stated it as his opinion that one-third of all the deaths in typhoid fever are due to perforations. When we consider that upwards of 50,000 die annually of typhoid fever in the United States and that over 16,000 of these deaths may reasonably be attributed to perforations, it gives the discussion of this subject a dignity which merits the best thought and best effort of all engaged in the practice of medicine and surgery.

I am convinced that every one treating a case of typhoid should have constantly before him the liability of the occurrence of perforation and that he should be on the alert to recognize it when it occurs and to act promptly should the emergency arise.

The nurse should be instructed that the occurrence of sudden and unusual pain in the abdomen, especially in the right lower quadrant, is a danger-signal and calls for immediate notification of the attending physician. She should also be instructed to note the pulse and temperature of the patient at half-hourly intervals after the occurrence of the acute pain. She should also be on the alert for other manifestations of shock as pinched features, cold extremities, clammy skin, the characteristic restlessness, etc., and the physician should be informed of the results of these observations as soon as possible that he may have all the aids to diagnosis at hand. Often subnormal temperature and other shock symptoms are very transitory and by the time the physician can reach the house they are gone. By this time it is usual for the abdominal muscles, especially over the site of perforations to become somewhat more rigid than normal, the rigidity increasing in intensity with the advent of peritonitis.

It may be stated that the severer the type of the fever and the worse the physical and mental condition of the patient at the time of the perforation, the more difficult will the diagnosis be and the more likely will the occurrence be overlooked. Definite symptoms such as have been sketched, even tho the diagnosis appears to be in some doubt, call for immediate abdominal exploration. In cases of doubt, if operation is delayed until positive diagnosis of developing peritonitis is made, the mortality is more than doubled. Thus far I have found perforation in every case operated and must confess to having lost some cases because of fear of opening an abdomen needlessly.

The mortality following perforations of typhoid ulcers without operation is said to be from 95 percent to 99 percent by different observers. The mortality of cases operated promptly after the occurrence of perforations, has been given by several at less than 50 percent. It must be acknowledged that at the period these operations are usually done the mortality is very high, many reporting 75 to even 100 percent. This mortality is not necessary if operation is done before peritonitis begins to develop, and I expect to live to see the time when prompt operation is the rule and the mortality not more than ten to twenty percent.

In all the operations for perforations the time element of the operation itself is of the utmost importance. "Quick in and quick out" should be the maxim. Labored and prolonged

technic will kill more than it will save. The aim should be to stop the leak by simple suture and establish peritoneal drainage by a large tube thru a stab-wound over the pubes with its end resting in Douglas's cul-de-sac in general. In rare instances it may be found that the leakage has been so slight and the soiling so localized that drainage may be dispensed with. It is also my opinion that we should be guided always by the time-worn maxim "When in doubt drain."

The one or two important points it is desired to accentuate are,

1. In every acute abdominal pain, think of the possibility of perforation of some part of the alimentary canal, and do not dismiss the case as trifling till perforation has been definitely excluded.

2. In every case of perforation there is an absolute indication for immediate operation.

3. If the symptoms point rather definitely to perforation, but the diagnosis is in some doubt, exploration is safer than delay.

4. Shock is no contra-indication to operation.

5. The operation should be as expeditious as possible, doing only what is necessary and leaving artistic ideals to less urgent cases.

The Serum Treatment of Erysipelas

BY W. O. BRIDGES, OMAHA, NEBRASKA

In looking over the late text books on the practice of medicine one is impressed with the scant reference made to the serum therapy of erysipelas, even if mentioned at all. In Osler, Thompson and French no mention is made. Anders quotes a few authors as having reported successful cases, and adds "The serum treatment is to be encouraged." Tyson refers to five cases of successful treatment reported by Russian physicians in writing of the use of diphtheria antitoxin in other diseases than diphtheria, and presumably assumes that the antitoxin was used by them in erysipelas. Wood and Fitz state that streptococcus antitoxic serum has been used in the treatment of erysipelas by Mamorek, Gnomakowsky and a few others with alleged good results. Edwards writes, "Chantemesse reduced the death rate of his cases two and one-fourth percent by serum treatment, a figure often reached by more simple treatment measures, say Rogers and Botogeni."

Referring however to other than text book literature, sufficient evidence is found to warrant a strong hope that the use of anti-streptococcus serum in the treatment of erysipelas is a step in advance and we wish to call attention to specific data and personal impressions to warrant this hope.

McMillan[1] in 1901 reported one of the first cases so treated. The case was severe, involving the face and scalp with persistent vomiting interfering with food and medicine. Ten cubic centimeters were injected and repeated on the following two days. The evening of the second day the local lesion was improved and the vomiting less. After the third dose the vomiting ceased, the redness and swelling subsided, the temperature dropped to 99, pulse 102 and rapid recovery followed.

Gill[2] in 1902 reported the recovery of a severe case under the same treatment.

Jarcho[3] in 1903 was a strong advocate of the use of the serum.

Ayer[4] in 1904 reported a series of fifteen cases treated by injections of serum. His conclusions after some details of ex-

planation were, 1st—"The administration of anti-streptococcus serum shortens considerably the course of an uncomplicated attack of erysipelas." 2d,—"That it tends to inhibit extension of the disease." 3d,—"That it has a strikingly beneficial effect upon the general condition of the patient, reducing the temperature, pain and discomfort." 4th,—"That it rapidly reduces the pathological leucocytosis." 5th,—"That it prevents or suppresses febrile albuminuria." 6th,—"That its use is attended without danger even in large doses." 7th,—"That the only disagreeable symptom referable to the serum, observed by the writer, is a transient eruption which occasionally occurs at the site of the injection." 8th,—"That the efficacy of the serum treatment is in direct ratio to the length of time which has elapsed between the onset of the disease and the first injection of the serum."

Ayer[5] reported thirty-three additional cases and reasserts his belief in the efficacy of the serum treatment. He comes to the conclusion, however, that it is useless to administer the serum after the third day of the disease. In his last series he states the average duration was shortened 2.6 days.

Gregoni[6] believes that the serum treatment of erysipelas is the rational one. Failure from its use he ascribes to using the serum too late, or in insufficient doses. He claims to have obtained remarkable results in a case of marked severity complicated by meningitic symptoms.

The value of the serum therapy has also been most favorably commented upon by A. Goss[7], Hobert[8] and Leudeking[9]. On the other hand a few writers take issue with the foregoing Gottheil[10] reports his experience with it as entirely unfavorable, and states that while the treatment seemed to do no harm in a number of cases in which he tried it, yet it did no good. Vidal[11] in a paper before the Medical Society of Paris contended that there was no proof of its having any effect upon the disease or its complications. Meyer, who favors the treatment, reports that he did not obtain any result from its use.

At the time Ayer's paper appeared, I had recently lost two cases of erysipelas of great severity; one thru death in which the disease extended with intensifying symptoms, finally involving the throat and larynx, in spite of most active treatment and attention. The other passed to another physician because

of my incapacity, and afterwards died. Both of these cases give no hint at their commencement of a serious type; the first being apparently a healthy young woman, and the other a laborer of good physique, but rather intemperate. Since that time, I have used the serum injection treatment in every primary case which has come under my observation, now numbering ten. Some of these were quite severe—all recovered. My favorable impressions of the treatment were based on the very marked effects, upon the fever, pulse, comfort of the patient, extension of the local lesion and the earlier termination the of disease. The fever and pulse in several of the cases were thought to be influenced as if an antipyretic had been administered, lowering remarkably, six to eight hours after an injection, followed a few hours later by an exacerbation, and again remitting after a subsequent injection. The extension of the local inflammation seemed not always to be influenced. In some there was a decided decrease in the intensity of the extension. In others, there seemed a mere reddening of the extension, without infiltration, but in all the most noticeable result was found in a defervescence of the parts originally involved, within twenty hours after injection, while yet extension was going on. For instance, it was frequently noted, that starting from the nose, and extending to either cheek and eyelid, by the time the latter had reached the maximum of swelling and redness, the nose resumed an almost normal appearance, barring a little redness. In case the lesion started on the cheek, and involved the eyelid on one side, to the extent of complete closure, when in extension, it reached the opposite side—it was not so sufficiently intense to close the eye and the lids first affected were sufficiently relieved to permit of opening. In no case did the picture present such a complete involvement of the entire face, as to exhibit that complete loss of contour with inability to open the lids, even a crack, and total loss of facial expression, which we have seen so many times. One might assume that these cases were all mild and would have recovered under any treatment. The latter part of the assumption can not be controverted, but the former will not hold, if one is to judge from high fever, delirium, active, severe and rapid extension. One of these cases was a man in the sixties, whose son had died the previous year of erysipelas, and who with the

entire family was much depressed and apprehensive. Chill, fever above 103, great restlessness, were the ushering in symptoms, with involvement of the nose and one cheek, at my first visit. Extension of the lesion, delirium, vomiting occurred—but in six days the patient was completely convalescent.

Another case might be said to have been mild, a woman about fifty had a chilliness, with slight redness of the nose and a temperature of 99.5, at my first visit. Diagnosis was reserved twelve hours, when fever was 102.5 and redness with infiltration had decidedly extended. Only one injection was given, followed by rapid improvement and the patient convalescent in three days.

I have just had under observation, a severe case in a woman whose husband recently died of the disease. The serum was given in the first twenty-four hours, when the lesion involved the nose and right cheek only. Extension occurred in spite of the injection and at present writing, (the third day) while the whole face is involved, the nose is pale by comparison, is not tender and the swelling has markedly decreased. Contrary to Ayer's statement, however, albuminuria developed, with scanty urine and nausea, which persisted two days when it rapidly subsided and convalescence became established on the sixth day.

In a disease which varies so much in its clinical history, it is impossible to deduce conclusions as a result of any special line of treatment, and one must be largely guided by personal impressions in the local and general effects of a particular course carried out.

Statistics count for little, and only after extended use of a given therapy by much observation over a considerable length of time, can we assume definite results. I do not wish to claim that antistreptococcus serum in the treatment of erysipelas, is specific, but I do want to state that my impressions formed from its use in a few cases, have led me to feel that I was not giving my patient the benefit of all I could do, did I refrain from giving the serum.

Fehleisen's discovery of the streptococcus erysipelatas as the etiological factor in erysipelas, led to the preparation of the serum, which has been designated "Antistreptococcus serum." This serum is supposed to be specific for any streptococcus in-

fection, but the variations in the strains of streptococci, which are found in these infections, brought up the question whether the particular serum was acquired from the particular strain, which was the cause of the disease under treatment. This led some producers to secure a serum, resulting from the use of a combination of the different strains which it was hoped would be antagonistic to any special variety in a given case. On this account I have selected the preparation, put up by Stearns, which is called streptolytic serum. Whether there is anything in this theory, I do not know. It is a reminder of the old shot gun prescription of many drugs, which was argued must contain at least one to hit the mark.

If the serum is to be used at all, it should be given early. From Ayer's conclusions, it is of no value after the third day, and in this regard is like other serum specifics. It is unnecessary to wait until the severity of the case is determined, as valuable time is lost and the remedy is harmless. I use it at the time the diagnosis is made, giving twenty cubic centimeters at the first injection. This is repeated in twenty-four hours, if any intensified extension of the lesion occurs. If there is marked improvement in the symptoms, and only slight increase in the lesion, ten cubic centimeters are administered. This rule also applies to the third day.

I have never administered more than sixty cubic centimeters all told, in one case, and less than this was sufficient in most of my cases.

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Tuberculosis of the Skin

BY ALFRED SCHALEK, OMAHA, NEBRASKA

To this class belong all skin diseases which are positively known to be due to the invasion of the tubercle bacillus into the skin or mucous membranes. They are by no means rare and are found most often amongst the poorer class of people who have little or no means to protect themselves prophylactically. General tuberculosis may exist at the same time but this is the exception. It would be interesting to know why the lungs and other organs are so much more frequently involved than the skin which is considerably more exposed to the infection. It is probable that the firm and not vascularized epidermis with its lower temperature prevents this accident.

Tuberculosis may invade the skin in two ways: I. By external inoculation, as is frequently seen in families in which some of the members suffer from consumption and others from cutaneous lesions only. Furthermore in people who come into contact with tuberculous material, like physicians, butchers, cattlemen and others. Similarly a phthisic patient may infect his own skin with his own sputum or other tuberculous secretions. II. The infection of the skin may come from internal sources and may be due to spreading of the virus from bones or glands either by contiguity, or by metastasis thru the blood and lymphatic circulation. It is difficult to ascertain which of these etiological moments is responsible in an individual case since the cutaneous appearance does not differ essentially with either mode of infection but according to the different biological conditions of the skin and the individual peculiarities.

Certain names are still in general use for tuberculous skin affection with definite clinical appearances tho they date from prebacteriological times. Such as have been positively demonstrated to be due to the tubercle bacillus are lupus, tuberculosis verrucosa, the scrofuloderma and the acute miliary tuberculosis of the skin. Many other dermatoses are now considered paratuberculous, that is, caused by the toxins, but such connection has not been definitely demonstrated; many of the patients affected with them, suffer from lymph-adenitis, perios-

titis, caries and necrosis, a complication of symptoms usually defined by the rather ambiguous name of scrofulosis. Among these skin diseases, collectively called tuberculides, are erythema induratum, acne cachecticorum, hydroadenitis suppurativa, lupus erythematosus and others. They will not be taken up in this discussion outside of merely mentioning them, because they are rare and of interest to the specialist only. The general practitioner, tho, should be thoroly posted on the acknowledged types of cutaneous tuberculosis and should recognize them the same as he would tuberculosis of the lungs and other internal organs.

In the description of the principal varieties I will consider briefly the characteristic diagnostic points which facilitate an early recognition of their nature. Lupus vulgaris and scrofuloderma begin usually in childhood, while the tuberculous warts and the miliary tuberculosis are seen more often in older ages. Lupus vulgaris is found much more frequently abroad than in this country, still it is not as rare as some occasional statistics would make us believe. Certainly many such cases are labeled with a wrong name and escape recognition. The common location of lupus are the exposed parts of the body, especially the face. Its typical lesion is a small nodule of the size of a pinhead and rarely larger than a split pea. It is at first located within the skin but gradually presses upward, producing a small elevation over the surface which at first does not present any alteration but soon appears glossy and slightly scaly. The nodules are of a somewhat transparent, yellowish brown color which does not disappear on pressure but rather becomes accentuated in comparison with the surrounding tissues rendered anemic. Its consistency is much softer than that of normal skin and a dull probe easily penetrates into the corium. These peculiarities of color and softness make the comparison with apple jelly very appropriate. The further evolution of these pathological structures is the same as of every other tuberculous deposit, that is, degeneration and disintegration with corresponding clinical manifestations. Indolent, sharply cut ulcerations which are shallow, have an irregular, wormeaten floor and exude a thin purulent secretion. The process may heal entirely or more often partially in one place and spread at the periphery, continuing indefinitely for years. The scars, the final evidence

of the disease, are hypertrophic, highly disfiguring and interfering with functions, if situated near the eyes, mouth and nose. Many textbooks assert that the destructive tendency of lupus is limited to the soft tissues and stops short of the bones, which fact may be considered a differential point from syphilis. There is however a possibility of perforation of the nasal septum or the hard palate which should be kept in mind. Unless lupus is affecting highly sensitive portions of the body, it causes little physical suffering. Frequently it begins on the mucous membranes there remaining localized for a considerable time and is then sometimes mistaken for a chronic catarrh until extension to the adjacent skin reveals its true nature. The histological changes are of the same character as tuberculous pathology is elsewhere: epithelioid and lymphoid cells and a large number of giant cells held together by connective tissue and elastic fibers. A few tubercle bacilli are occasionally, but infrequently, found along the borders of the giant cells.

Scrofuloderma is characterized mainly by a more or less circircuscribed infiltration in the subcutaneous tissue which softens and breaks down. The overlying skin appears unchanged at first but gradually becomes prominent, thinned and lividly discolored. The results of the breaking down are ulcers which are undermined, have ragged edges and indolent granulating floors. The process spreads in a straight direction forming long linear ulcerations and fistulas undermining the skin. The scrofuloderm originates preferably in tuberculous glands and occupies usually such regions, where these are present, especially about the neck. The disease is usually painless; the resulting scars are depressed, irregular, sometimes adherent to the tissues below and give forever afterwards evidence of the early diathesis. The pathological histology corresponds to that of a tuberculous cold abscess; tubercle bacilli are rarely found, but inoculations on guinea pigs are usually successful. Mixinfections with the pyogenic bacteria are common.

Tuberculosis verrucosa cutis is relatively the mildest variety and only exceptionally gives rise to serious complications. It occurs on the hands and fingers of people who handle tuberculous material and occasionally in phthisics and their relatives produced by the contact of the tuberculous sputum with their skin. The so-called postmortem or anatomical wart belongs

to this class. A small limited area of the skin shows a superficial hard infiltration, slightly scaling and a dull red surface which eventually becomes transformed into a rough patch of small closely aggregated papillary excrescences. Only a low degree of inflammation and slight tendency to ulceration is present, tho occasionally tuberculous lymphangitis and general infection have followed.

Miliary tuberculosis of the skin represents the same type in relation to the skin as acute miliary tuberculosis of the lungs does in relation to a chronic tuberculous process of the internal organs. It is almost always evidence of involvement of the whole system. Its places of predilection are the mucous orifices, as the mouth and pharynx in lung tuberculosis, the anal region in intestinal and the genitals in uro-genital tuberculosis. The lesions are minute grayish or whitish spots which rapidly break down and form small superficial, sharply cut ulcerations. They are very painful and show no tendency to heal, possibly because they usually make their appearance when the patient is in extremis.

The diagnosis of the tuberculous skin diseases may be made by strictly scientific methods or from the clinical picture alone. The first way is absolutely necessary where the clinical symptoms leave any doubt. It includes microscopic examination of excised tissues which is absolutely conclusive only if the bacilli are found; this however is the exception. More important are inoculation tests on animals; most commonly used for this purpose is the peritoneum of guinea pigs and the anterior corneal chamber of rabbits. It must be kept in mind that positive results take occasionally as long as a year to realize and that their absence can not be taken as a negative evidence. Altogether too little employed, at the present time, is Koch's tuberculin which for diagnostic purposes has unquestionable value. A local reaction in the diseased skin together with a rise of temperature and general malaise after its injection is observed in tuberculous patients only. Lately the ocular instillations and rubbing the tuberculin into the skin have been used instead with good results. For practical purposes the diagnosis may be made however in most cases of cutaneous tuberculosis from the history of the patient and the efflorescences found on the skin.

The prognosis of tuberculosis of the skin and the mucous membranes depends on the general condition of the patient, the extent of the disease, the time at which it is diagnosed and treated and finally on the circumstances of the patient whether they will permit him to take thoro care of these insidious diseases or not. The prognosis *quod vitam* is favorable; while the danger of a systemic involvement from a local focus is always present, it is fortunately the exception. The prognosis as to local results can not be called brilliant even by an optimist. A few cases of scrofuloderma and lupus heal spontaneously, the majority however need measures continued for a long time which, even if successful in removing the active eruption leave disfiguring and sometimes treacherous scars.

The therapy should be prophylactic in the first place. In families of consumptives the dangers of contact with the tuberculous sputum should be guarded against; children especially should be protected by paying special attention to the care of their skin; any present skin disease, which is liable to become the opening portal for infection should be cured as quickly as possible. Enlarged glands and obstinate chronic nasal catarrhs are often the very first evidences and should be looked after carefully. Constitutional treatment is very important and should look to the building up of the general constitution. It would take too much time to go into details of all the local treatments which have been tried from time to time. The aim of whatever treatment is attempted must be the removal of the diseased tissues harboring the bacilli with the least possible destruction and consequent disfigurement and interference with functions. Practically all dermatologists are united at the present time in considering the Finsen light and the X-ray as our most valuable therapeutic measures in these affections. To give you my experience with the X-rays, I can not improve on my statement which I made before the Douglas County Medical Society some time ago in a paper on radiotherapy in dermatology. I said at that time and have not changed my opinion since: Tuberculosis of the skin must be mentioned second in order as to good results from radiotherapyin skin diseases (superficial carcinoma of the skin was mentioned first). Up to the introduction of light treatment lupus vulgaris was the bugbear of the dermatologists. Even after a cure the disfiguration from

hypertrophic scars was as a rule highly annoying. At the present time most of these cases yield within a reasonable time and the after appearance of the skin is smooth and inobtrusive. A recent advantage is found in the employment of carbonic acid gas snow, which in conjunction with the X-rays promises a great improvement on our present methods.

Diagnosis and Treatment of Accessory Sinus Disease by Means of Suction

BY JAMES M. PATTON, OMAHA, NEBRASKA

The use of suction or negative pressure in conditions relative to the nose, is not entirely new, yet it is only in the last three or four years that the matter has been brought to the notice of the profession with any degree of prominence.

In July 1906 Dr. Frank Brawley, of Chicago, published an article demonstrating the use of the Victor pump for producing negative pressure, connected thru an ordinary wash bottle with a suitable nose piece, and mentioned that Sondermann and Spiess had published reports within the year on the treatment of intra-nasal conditions by means of suction. About the same time the late Dr. Geo. H. Bicknell called my attention to the same principle, using a four ounce metal syringe with an acorn shaped nose piece, with very satisfactory results. Over a year ago Dr. Geo. L. Strader, of Cheyenne, told me he was using the saliva ejecter of his fountain cuspidor, armed with a conical nose piece, to produce negative pressure, and was the first, so far as I have been able to learn, to employ water pressure for the purpose. He also suggested the use of an ordinary bicycle foot pump with the valvesreversed. I used this latter with the special nose piece which I devised, for some months, in fact until I heard of the Brawley water pump, which consists essentially of the ordinary vacuum apparatus of the laboratory; this is connected with a wash bottle by means of non-collapsible rubber tubing, another piece of the tubing armed with some sort of a suitable nose piece completing the apparatus; the ordinary acorn shaped nose piece of glass or rubber doing very well, as it is easily sterilized and does not irritate the mucus surface of the nose.

The wash bottle collects the material which may be drawn from the sinus and also prevents clogging of the pump, and is easily cleaned. It is only necessary to draw a stream of hot water thru it each time it is used. The management of the apparatus is very simple and the patient can be taught to use it himself in a few minutes. First remove all crusts and secretions from the nose with cotton swabs, and reduce any tumefac-

tion by spraying with a weak solution of cocain. Regulate the degree of suction desired by the faucet, insert the nose piece well into the nostril that its opening may not be occluded by overlapping of the flexible nasal wall, the other nostril held shut and the pharynx closed by having the patient sound the first half of the letter K, by blowing forcibly into the cheeks, by the act of swallowing or opening the mouth very widely, or by a very forced inspiration. As some patients experience a little difficulty in closing the pharynx it may be necessary to try various methods. The treatment is continued from five to twenty minutes as indicated later.

The value of position must not be overlooked, it being of value to have the head held in such a way that the ostium of the sinus under examination, or that you wish to drain, may be as dependent as possible.

For private calls or when it is necessary to supply the patient for home use I have been employing the small suction apparatus supplied with the ordinary mechanical cupping outfits found on the markets. This may be combined with some special nose piece to prevent clogging the pump with secretion.

The theory upon which this treatment is based has been pretty carefully worked out by different observers, both in this country and in Europe, and in the main is as follows: When a focus of infection is present, e. g., in one of the accessory sinuses, ear, etc., nature at once attempts to combat the invasion by throwing out an exudate rich in bactericidal serum. The efficiency of this serum depends in a great measure on the facility with which serum low in bactericidal power, as it must be, after contact with the active infection, can be replaced by fresh serum of a high resistance. It is at this point that suction has the advantage of the compression method of producing a similar result, as practiced by some, especially in Europe, who have reported unfavorably upon its use in treatment of sinuitis, etc. The reason for this is obvious, for while the compression method may yield an increase of the serum present, it results in stasis, both thru the blood stream and also by back pressure from the arteries, which in a short time reduces the vitality of the serum so that it not only does not inhibit the infection, but may even be the means of its more rapid advance.

The suction method on the other hand, not only removes the germ-laden secretions and non-resisting serum, but also floods the tissues and bathes the surfaces with fresh serum rich in resistance, at the same time stimulating the local circulation.

As an aid to diagnosis in the obscure borderline cases in which there is headache, weariness on close application, or a sensation of dullness in or about the eyes, with no error of refraction or muscle insufficiency to account for it, *even when examination fails to show any pathological conditions in the nose,* the use of suction not infrequently will reveal the presence of pus in one or more openings of the accessory sinuses.

Again in cases where there is direct evidence of sinuitis it is sometimes not easy to tell which or how many of the cavities are affected. By carefully cleansing the nasal cavity and applying suction the offending cell or cells can usually be detected by the locality of the presenting secretion.

In my own limited experience I have, with but few exceptions, used the suction in connection with other recognized forms of treatment. There is no doubt that its therapeutic action is greatly increased thru establishing free drainage by position, by the removal of polypi, hypertrophies, etc., and by free lavage of the cavity with a warm alkaline solution. I will mention a few cases that will illustrate the application of this method.

Case I. Mrs. G. aged 34, previous history negative, intense frontal headache accompanying a severe cold. Examination showed marked congestion of the nasal mucosa with tumefaction of the turbinal bodies, the middle meatus being almost entirely closed. Treatment:—After shrinking the tissues with a weak solution of cocain, suction was applied for five minutes, when the pain was entirely relieved. The usual measures were taken to relieve the congestion by internal medication. The patient returned the following day, some headache, which disappeared after a few minutes use of the suction. Did not return for further treatment. In this case there was no pus present.

Case II. T. P. aged 55, complained of pain over eyes. Errors of refraction corrected. No history of discharge from nose, could not breathe well thru right nostril. Moderate sized spur removed from right side of septum. Suction not tried. Returned nearly a year later, good breathing space, but still has pain, worse over right eye. Transillumination showed right frontal

region decidedly cloudy. Patient of rather low vitality not well nourished. Treatment:—Tissues contracted in usual way and suction applied for ten minutes resulting in free discharge of pus in anterior part of middle meatus, relieving pain. As the right middle turbinate was rather boggy I resected the anterior one-third and continued use of suction for from ten to fifteen minutes daily, combined with lavage, etc. The patient could not be induced to stay in a hospital and suffered from a severe attack of la grippe which retarded healing; however, he went home at the end of three weeks with entire relief from distressing symptoms. I supplied him with a small suction apparatus with instructions to use it if there should be any return of symptoms.

Case III. Mrs. V. consulted us in the fall of '08 for loss of vision in left eye, with severe pain in frontal region extending to occiput at times. Gave no history of nasal trouble, but mucosa found to be congested and both middle meatal regions tightly plugged with turbinal hypertrophies. Anterior third of middle turbinates resected, improvement in vision promptly followed, patient went home, no suction tried. She returned in January '09 with vision normal in both eyes with correction, but complained of very severe pain in right frontal region extending to back of head. Transillumination negative. Treatment:— Cocainization and suction revealed pus in posterior part of right middle meatus. The remainder of the right middle turbinate was removed and the post-ethmoids exenterated with improvement of the frontal symptoms. However, occipital pain continued, which disappeared entirely on removing the anterior wall of the right sphenoid sinus, establishing free drainage. There was some frontal headache for several days, worse in morning, disappearing after each suction treatment, when there was a free discharge of pus from the ethmoidal region. This rapidly improved and the patient was sent home with instructions to use the small suction pump two or three times a week. I heard from her a few days ago, she reports herself free from pain and other symptoms.

Case IV. E. J. aged 43, complains of profuse fetid discharge from right nostril, right middle turbinate hypertrophied and bathed in pus, left middle turbinate apparently normal. No tenderness over frontal regions, transillumination doubtful, due

to very thick superorbital wall. Treatment:—Cocainization and suction. Evacuation of three or four drams of very offensive, yellowish pus. Half of right middle turbinate resected and anterior ethmoids exenterated. Daily suction and lavage, free evacuation of pus for two weeks, but no odor after third day. Discharge much reduced after second week. Is now getting two treatments a week with constant improvement.

Case V. Mrs. P. aged 35, had asthma three years ago when about one-third of both middle turbinates were resected with prompt relief of symptoms. Now complains of frontal pain worse on right side, mucosa congested, sigmoid deflection of septum, some hypertrophic nodules in right middle meatus. Treatment:—After shrinking tissues, suction applied for ten minutes with relief of headache, which returned in moderate degree by next morning. Treatment continued daily for a week when symptoms had entirely disappeared. Patient sent home with small pump and instructed to continue its use.

Other cases could be mentioned, but these well suffice to show the application of this method. Of course, this is not applicable to all cases of sinus disease, but if we can by its use aid drainage and secure healing with a minimum destruction of the tissues the resulting comfort to the patient certainly warrants its trial. Altho I have been employing this method but a comparatively short time and would scarcely be in a position to express a definite opinion as to its value, yet the favorable reports of such men as Brawley, Strader, Lewis, and others who have been employing the suction method the past three or four years, agreeing so fully with the satisfactory results which I have secured, convince me that we have in it a real addition to our equipment for the handling of these cases, of value not only to the specialist, but to the general practitioner as well.

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EDITORIAL

Progress of the College

Among the appropriations made by the last legislature was an item of $20,000 for the purchase of a site for a medical campus in the city of Omaha. This may justly be regarded as a most important epoch in the history of the institution. The highest legislative authority in the commonwealth has passed upon the location of the clinical department of the college and has established it definitely in the great metropolis of our state. While this decision was reached by the Board of Regents at the time when the Omaha Medical College became a part of the University yet it needed some positive action by the legislature to settle beyond possibility of cavil the question of location. With the purchase of a medical campus in Omaha, all doubts and questionings on the part of both friend and critic are finally at an end.

The Board of Regents has appointed a committee consisting of President C. S. Allen, Chancellor S. Avery, Dean Henry B. Ward, and Doctors Jonas, Bridges and Findley to receive tenders of land and recommend to the Board that site which all in all

seems to be best adapted for the purposes of the College. The Committee is expected to make an early report and the land already placed at its disposal furnishes several admirable sites for a medical campus.

After the ground has been selected the next duty of the University will be to secure appropriate general plans for the entire medical plant which is to occupy the clinical campus. This will include a group of eight to twelve structures according to the size and character decided upon for individual buildings. If an appropriate partition of the entire tract, a dignified style of architecture, and a congruous grouping of the various units are decided upon before work begins the University may hope to develop the medical campus in a manner worthy of a great city and a great institution. Nothing should be permitted to stand in the way of such a plan and every step should be taken in full consciousness of the future demands and possibilities in medical education.

The plans for the development of the College received material assistance thru the suggestions of Mr. A. Flexner who in behalf of the Carnegie Foundation for the Advancement of Teaching conducted a most rigorous examination of our facilities recently. Mr. Flexner is carrying thru a complete inspection of medical schools on this continent and does not hesitate to call attention to weak points in the organization or methods of the strongest institutions. His comments on various prospective campus locations and on the general plans for the development of the institution were particularly welcome at this stage of progress. The University is indebted to him for many valuable criticisms which will be incorporated in the working out of detailed plans and it also appreciates the words of encouragement he proffered in commendation of the steps already taken and the plans in hand for future progress.

The hard work of the past seven years is being abundantly justified in the results of student training and in the recognition accorded the College at home and abroad. The members of the faculty, our alumni and all friends of the College are entitled to regard with real satisfaction the progress already made. But even greater things lie before us in the near future and will come on the heels of the new campus and the plans for the new College plant.

COLLEGE NOTES

At a luncheon tendered Professor Flexner, who has been inspecting the university college of medicine on behalf of the Carnegie Foundation for the Advancement of Teaching, by Dean H. B. Ward, the visiting professor highly commended the work of the Nebraska school.

He spoke voluntarily to Chancellor Avery and others present in commendation of the strong foundations which had been laid here for a medical college, commenting upon the balance of the course, the thoroness of the work, the earnestness of the students, and the evidently good results achieved. He expressed the hope that the college might receive better quarters and that the heads of departments might be given more assistants to relieve them of the unduly heavy burden involved in preparing material for class use. He congratulated the college upon the vote of the legislature which assures a suitable campus in Omaha and urged that the clinical work should be further developed along the line of the German schools, which by virtue of several centuries of experience have perfected medical education to a degree unknown elsewhere.

Mr. Flexner warmly praised the individual teaching in laboratory and clinic and certain other details in the methods employed which he said could not be found elsewhere west of the Alleghany mountains. He urged that the college continue to place its emphasis upon the quality of work and await confidently the general recognition which it would be sure to win, if the present policy was maintained. In the opinion of Mr. Flexner the medical schools of the country will ultimately be reduced to one tenth of their present number. He was confident that Nebraska had all in all the best school in the west. Mr. Flexner left for Denver and the Pacific coast and before his return to New York will have visited every medical school in the United States.

Beginning April 25th the second annual practitioners' course of the college of medicine began its work. Nearly a score of practicing physicians from over the state were in attendance, seeking to learn by practical demonstration the latest things in medical science. The course continued thruout the week.

The practitioners' course was inaugurated last year. At that time only seven or eight physicians enrolled, but the work went thru without a hitch. This year the number was doubled and the course enlarged to meet the variety of needs. Lectures and demonstrations were given each morning and afternoon and three meetings were held in the evening.

The course is intended to give to country practitioners a chance to see by demonstration the new things in medical science, such as do not ordinarily fall under their observation. There are many new discoveries which cannot properly be made clear thru the medical literature, but which may be plainly demonstrated in the laboratory. It is these which are made clear to the visiting physicians.

The idea of such a course is taken from the University of Vienna in Austria. For several years this school has annually had such a course and it is attended by physicians from all over the empire. Comparatively few of the schools in America have undertaken the establishment of a similar department, but the Nebraska authorities have been much satisfied with the workings of their venture.

Monday evening Dr. Lyman, head of the department of pharmacy, gave a lecture on "The Relation of Pharmacy and Medicine." Wednesday evening Dr. Guenther spoke on "Some Aspects of Mental Therapy." Friday evening the visitors were the guests of honor at the regular meeting of the pathological club at which Dr. Woolley of Omaha was the principal speaker.

The regular program for the week was as follows:
Monday a. m.—Dr. H. W. Orr, Orthopedic hospital.
Monday p. m.—Dr. H. H. Waite, bacteriological laboratory.
Tuesday a. m.—Dr. Poynter, anatomical laboratory.
Tuesday p. m.—Dr. Wolcott, anatomical laboratory. Dr. Willard, histological laboratory.
Wednesday a. m.—Dr. Everett, Everett sanitarium.
Wednesday p. m.—Dr. Orr, Orthopedic hospital.
Thursday p. m.—Dr. Guenther, physiological laboratory.
Friday a. m.—Dr. Lehnhoff, demonstration laboratory.
Friday p. m.—Dr. Lyman, pharmaco-dynamics laboratory.
Saturday a. m.—Dr. Pillsbury, state insane hospital.
Saturday p. m.—Dr. Dales, chemistry laboratory.

The Swedish Immanuel Hospital will soon have completed its new pavilion. This will more than double the present capacity of the hospital and will greatly increase the clinical facilities of our school. Dr. Prichard, '08 has been retained as house physician and surgeon for another year and B. L. Myers, '09 has received the appointment as interne for the coming year.

Dr. Fitzsimmons, '02 of Tecumseh gave most valuable assistance in procuring the appropriation of $20,000 for a site for the Medical Department of the University of Nebraska. We are grateful for his services and for those of other members of the alumnae and student body. Such demonstrations of loyalty to our institution are most gratifying.

The new Bishop Clarkson Memorial Hospital is nearing completion. This will be one of the most complete and artistic institutions of its kind in the west. Two graduates of medicine will be appointed as house physicians and surgeons. Our faculty is largely represented on the staff and it is expected that this hospital will provide large clinical facilities for our students.

Dr. Harry Benson, '03, who has been connected with the Institute for the Feeble Minded at Glenwood since his graduation, has purchased Dr. Sward's practice in Oakland and will reside there in the future.

The committee for the selection of the new site for the Medical Department is composed of the Chancellor, President Allen of the Board of Regents, Dean Ward, Dr. Jonas, Dr. Bridges and Dr. Findley. They are considering a number of locations which have been offered to them.

R. W. Christie, H. L. Mantor and O. W. Wyatt of the class of 1909 have been appointed as internes at the Methodist Hospital from June 1st, 1909 to June 1st, 1910.

Dr. C. C. Morrison, '03 has returned from a very beneficial and enjoyable trip. He spent three months taking post-graduate work in Chicago and New York.

Dr. C. C. Tomlinson, '08 who has been house physician at the Douglas County Hospital since June has now located at Elm Creek, Nebr. Dr. Charles Lieber, '08 has taken his place at the County.

Dr. Schalek read a paper on "The Therapeutic Value of Carbonic Acid Gas before the Medical Society at Carroll, Iowa on April 23.

On February 25 the board of directors of the Western Medical Review selected Dr. H. Gifford to succeed Dr. Bicknell on the board of directors and Dr. Paul G. Woolley as associate editor.

Dr. D. R. Brower of Chicago died March 1 from a cerebral hemorrhage. He will be remembered by the University College of Medicine as its Commencement Orator in 1903. His commencement address was marked by its breadth of view and grasp of the questions handled and was the first in a series of great modern presentations that have characterized the commencement exercises in recent years.

The University of Nebraska has just been admitted to membership in the American Association of Universities, according to an announcement just received by the chancellor's office.

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(THE OMAHA MEDICAL COLLEGE)

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